UPGRADING NUCLEAR MEDICINE PRACTICES (ARCAL XXIII) (RLA/6/027) E1 New

CORE FINANCING

YEAR	Experts		Equipment	Fellowships		Scientific Visits		Training	Sub-contracts	Misc. Comp.	Total US $
	m/d	US $	US $	m/d	US $	m/d	US $	US $	US $	US $	
1995	3/15	39,900	85,000	-	-	-	-	-	-	-	124,900
1996	2/ 0	24,000	85,000	-	-	-	-	40,000	-	-	149,000
1997	4/ 0	50,400	50,000	-	-	-	-	40,000	-	-	140,400
1998	1/ 0	13,200	40,000	-	-	-	-	60,000	-	-	113,200

First Year Approved: 95

OBJECTIVES: To widen the use of existing nuclear medicine equipment by upgrading analogue gamma cameras with standard PCs and relevant software; to transfer the technology and the expertise in computer interfacing and programming of nuclear medicine studies by preparing a team of medical physicists in each participating country; to achieve *a certain standardization of clinical studies* by establishing standard protocols, including presentation of results.

BACKGROUND: In Latin America there are about 650 gamma cameras in 400 nuclear medicine centres, and they play an important role in medical diagnostic studies. About 200 are of the analogue type and 50 are gamma counters with old computer systems. Most of them are more than 10 years old or are second-hand cameras massively imported from the USA in the last decade. The number of second-hand gamma cameras in the region is expected to increase rapidly in the coming years. Analogue gamma cameras usually have no computer connections or are connected to very old or obsolete computers. An up-to-date computer system with software suitable for upgrading an analogue gamma camera can be purchased for about $40,000-$60,000 but most nuclear medicine centres in the region cannot afford them. In addition, there is at present no standardization of clinical protocols, or presentation and interpretation of results from clinical studies owing to the lack of computers and adequate software in the gamma cameras in use. The addition of a computer and software would facilitate image acquisition, data storage, processing and display of the clinical studies. The upgraded gamma cameras would be able to carry out dynamic studies and to improve their performance owing to the modern correction circuits added to new computers.

PROJECT PLAN: Nationwide surveys of nuclear medicine centres will be carried out in order to obtain exact information about the location and status of the gamma cameras that need upgrading. Initial efforts will be concentrated on upgrading a few gamma camera systems in some major public nuclear medicine centres in each Member State in the region. In countries with a large number of old gamma cameras, the project will have two project counterparts, a nuclear electronics engineer for assembly and installation of the upgrading system and a medical physicist for tests and demonstration of the upgraded system. These upgradings will be used for demonstration and promotion of other analogue gamma camera upgrades. The project will transfer the technology and the expertise in computer interfacing and programming in nuclear medicine through regional workshops, national training courses and expert services. In this way each participating country will have, at least, a team capable of undertaking future upgradings. Through a CRP on Validation of Interfacing with Gamma Cameras and Appropriate Applications Software for Data Processing of Clinical Studies, starting

in 1995, investigators will be trained in modifying and updating the software provided by the Agency. At the end of the project every nuclear medicine centre should either have its analogue gamma cameras upgraded, and gamma counters with old medical computers replaced by an up-to-date computer with relevant software, or be convinced of the benefits of doing so.

REGIONAL AND NATIONAL COMMITMENT: The (nearly 40) public medicine centres that will participate in the project will provide the PCs and printers required by the upgrading (about $3000 each) of old gamma cameras. The centres will also provide the medical physicists to be trained.

AGENCY INPUT: Expert services; interfacing cards and software required to upgrade the gamma cameras, at a cost of about $4000; training in modifying and upgrading the software provided by the Agency, through the CRP outlined in the Project Plan, above; training teams of medical physicists to implement the necessary upgradings after the conclusion of the project. During the life of the project, recipients of the software will receive the improvements made to it.

IMPACT: The project will upgrade nearly 50 gamma cameras located in public nuclear medicine centres in the Latin America region. Each upgrading will mean savings of nearly $30,000. Furthermore, the increase in the useful lifetime of the gamma camera translates into savings of close to $200,000, which is the cost of replacing the old one. It is expected that, following the success of the upgradings, 200 more analogue gamma cameras in the public and private sectors, as well as others to be imported in the future, will be upgraded without Agency assistance. The trained group of medical physicists from each participating country will be capable of installing the hardware and software developed under the project and of making the necessary adaptations in each case. Other teams participating in an associated CRP will be able to update the software provided by the Agency.